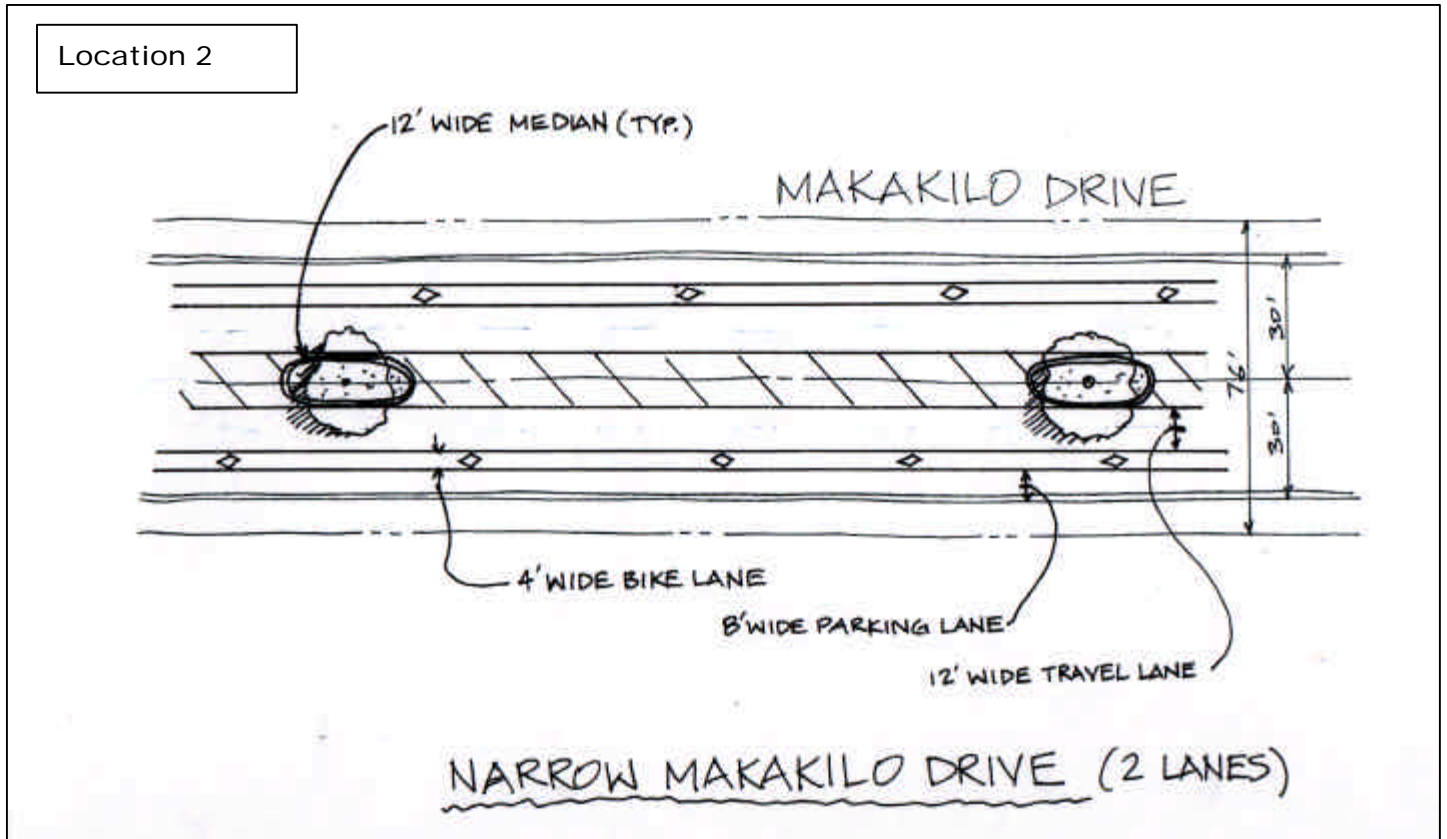


The first conceptual design is at the intersection of Makakilo Drive and Palahia. Residents identified this as a priority location for improvements. The roundabout would provide turning movements for all types of vehicles. There are few driveway conflicts, since this is a largely multifamily area, but the driveway at top left of drawing would need to be posted right turn only. Traffic would slow dramatically at this intersection yet there would be less queuing to make turns onto Makakilo because traffic would be constantly moving. Pedestrians would have a much easier time crossing the road using the marked crosswalks at a roundabout as opposed to a conventional intersection. The crossing distance is lessened and traffic will be slowed to a point where it would be more comfortable for motorists to stop for pedestrians, while pedestrians can find safe gaps in traffic for them to cross. The roundabout would decrease the amount of pavement and could be substituted for grass or other plantings.

The lanes approaching the roundabout are horizontally deflected by the splitter islands. The lane in the roundabout from the edge of the truck apron to the curb should be 17 feet wide, allowing for a design speed of 20 miles per hour.

This treatment is to be used in combination with the following design of narrowing Makakilo Drive. Neighbors thought that four treatments through this area worked well together as a package that they ranked their second highest priority (see Summary p. 22). This roundabout design was part of that package.

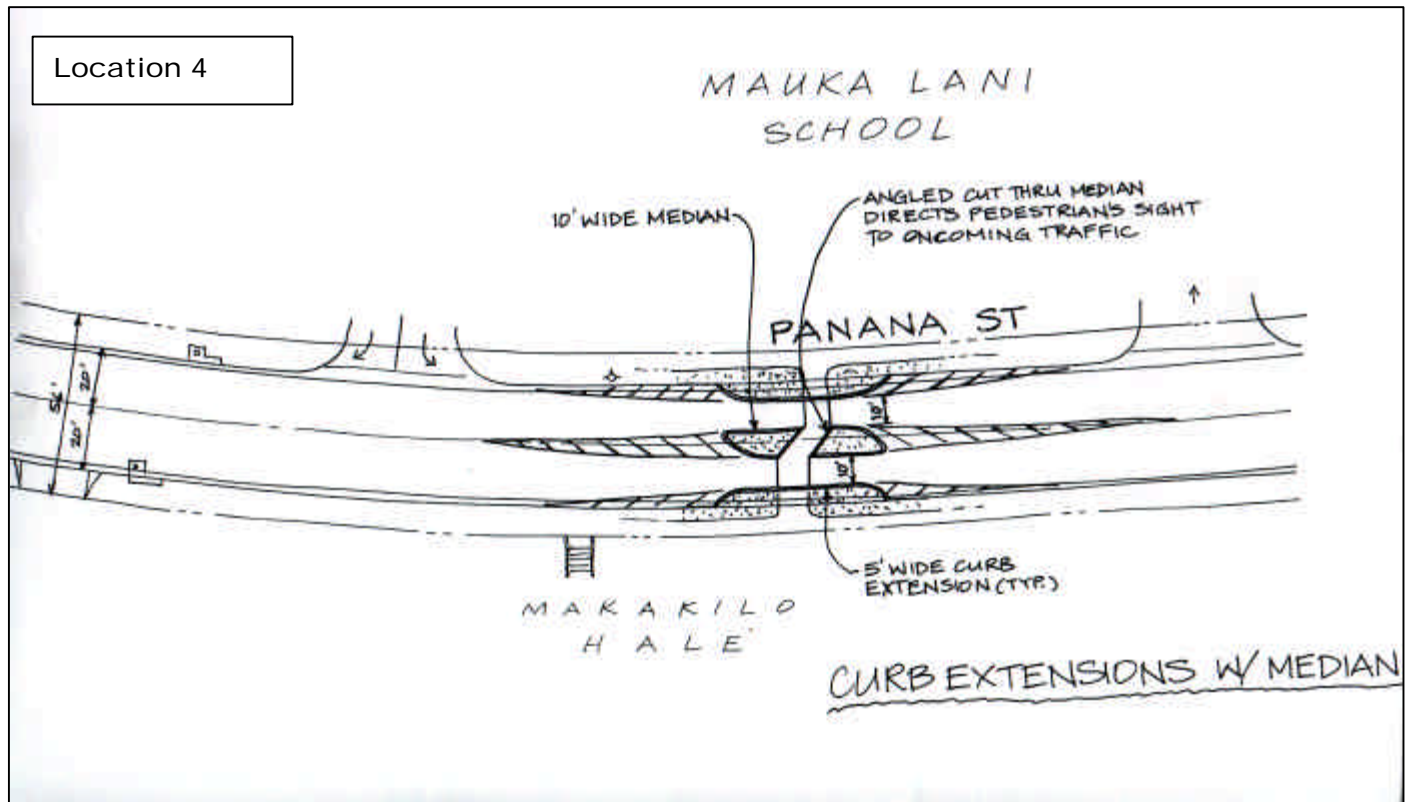


The design above was the second element of the package selected by residents as their number 2 priority for implementation. This upper portion of the neighborhood generates higher speeds and the wide roads encourage passing, making it difficult for pedestrians to cross the street.

Residents suggested narrowing Makakilo Drive mauka of Panana Street to reduce this undesirable speeding. The team suggests maintaining a third center lane, which should be a two-way left turn lane (TWLTL) near any driveways, or a painted median with occasional short landscaped median islands as show above. Budget permitting, a 12-foot wide landscaped median could be added. This would beautify the neighborhood, serve as a refuge island for pedestrians to cross the road, and slow traffic by eliminating two lanes and the accompanying competition and passing. Two 12-foot travel lanes and two 8-foot parking lanes are illustrated above, but there is some flexibility in the design details.

Two four-foot bike lanes would be added on either side of the road. Because of the topography it may be appropriate to widen the bike lanes to five or six feet. The steep incline is difficult for bicyclist and those going up hill may need to weave a little in order to make it up the hill. An extra foot or two would make this easier on the bicyclist. Likewise, going down hill bicyclists can travel much faster and then, like a car, need more room to travel at higher speeds. The vehicle travel lanes can range between 12 and 10 feet; the ten-foot lanes are recommended to generating more moderate speeds. The median lane could be reduced to ten feet, but the center lane striping should be at least one foot outside of the raised median island.

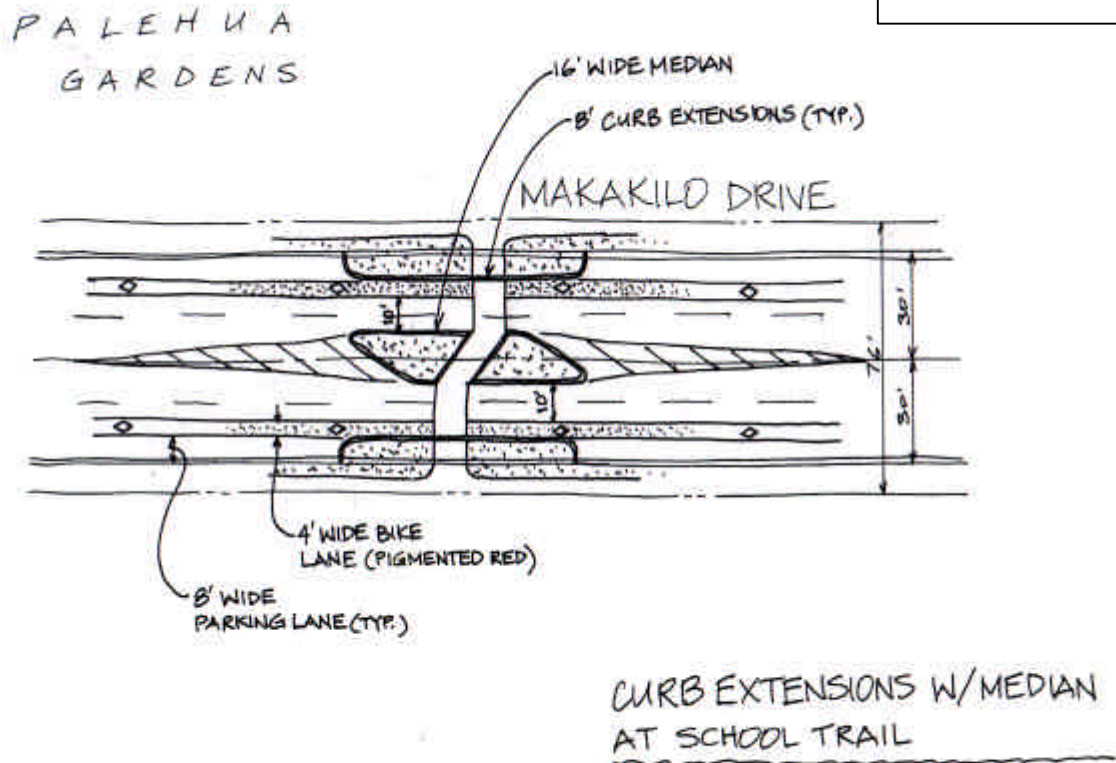
A similar three-lane configuration would work on Palahia Street, but without the parking (which is currently not a part of the existing four-lane configuration).



This design illustrates residents' request to install a mid-block crossing at Mauka Lani Elementary School on Panana Street. This design was the residents' number one priority.

This mid-block crossing is specifically designed with an angled cut through at the median that directs pedestrians to look straight at oncoming traffic after crossing to the median island. This reduces the likelihood of children darting all the way across the street at small breaks in traffic. The pedestrian is given protection by bulbouts on either side of the road and a center median. The narrowing of the roadway both marks the pedestrian crossing and forces motorists to reduce their speed. This is an especially important treatment at the school to provide added safety for children being dropped off or picked up, along with those walking to school.

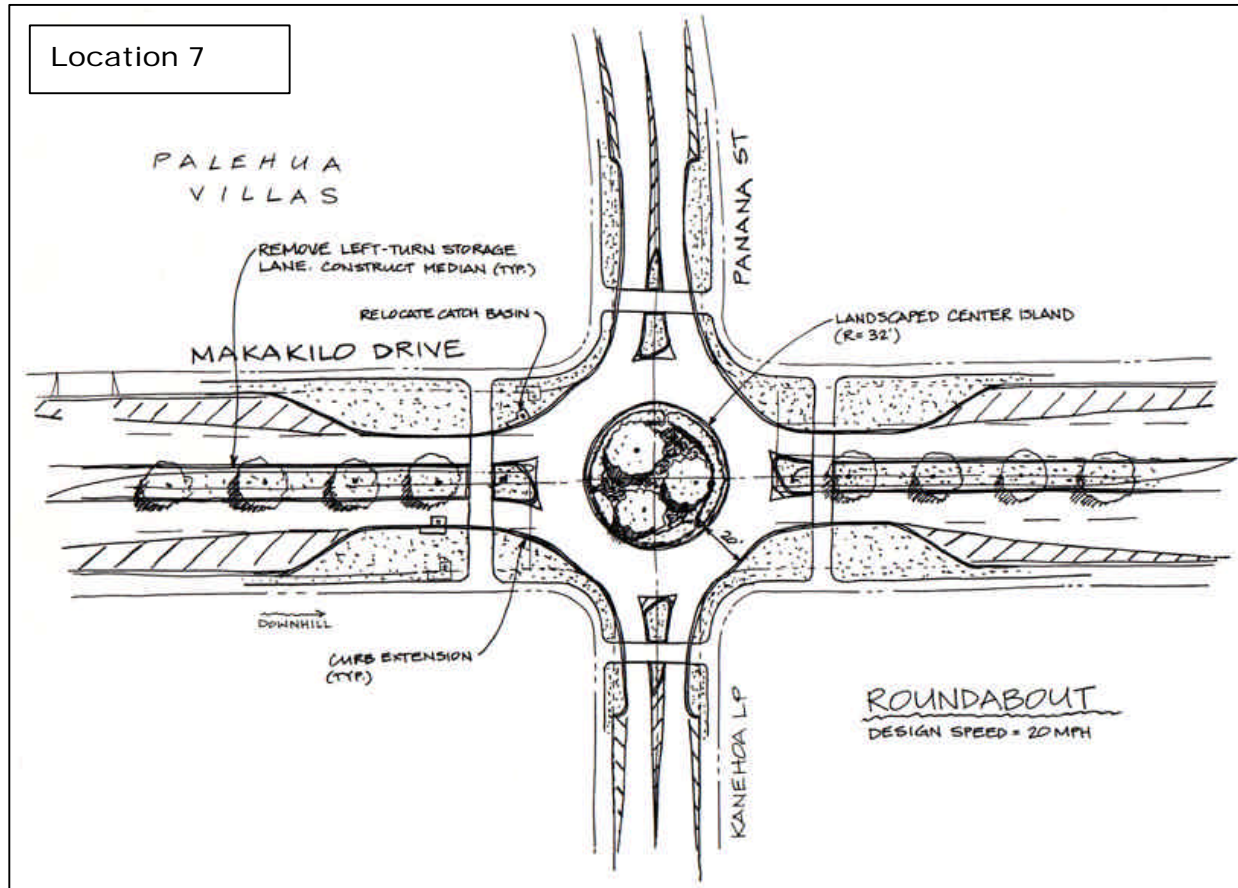
The medians should be tapered so as not to interfere with the ingress and egress of traffic from the driveways on either side of the crosswalk.



This design is a mid-block crossing at the trail to Mauka Lani School from Makakilo Drive, adjacent to the Palehua Gardens property. This is the third part of the four-part package ranked as the Number 2 priority by Makakilo residents.

This crosswalk is very similar to the previous design on Panana Street, except that the existing roadway is substantially wider. This mid-block crossing is also designed with an angled cut through the median that directs pedestrians to look straight at oncoming traffic. This reduces the likelihood of children darting all the way across the street at small breaks in traffic. The pedestrian is given protection by bulbouts on both sides of the roadway and a center median. The narrowing of the roadway both marks the pedestrian crossing and serves to reduce vehicular speed.

This crosswalk design could be installed as a stand-alone device (without the lane reduction from five to three-lane configuration), but would be much more effective in concert with the roadway narrowing. If the roadway were not reduced, there would still be two lanes going through in each direction. This would increase the likelihood that one motorist would stop, the pedestrian would proceed, and a motorist in the other lane would fail to yield while passing the stopped vehicle.

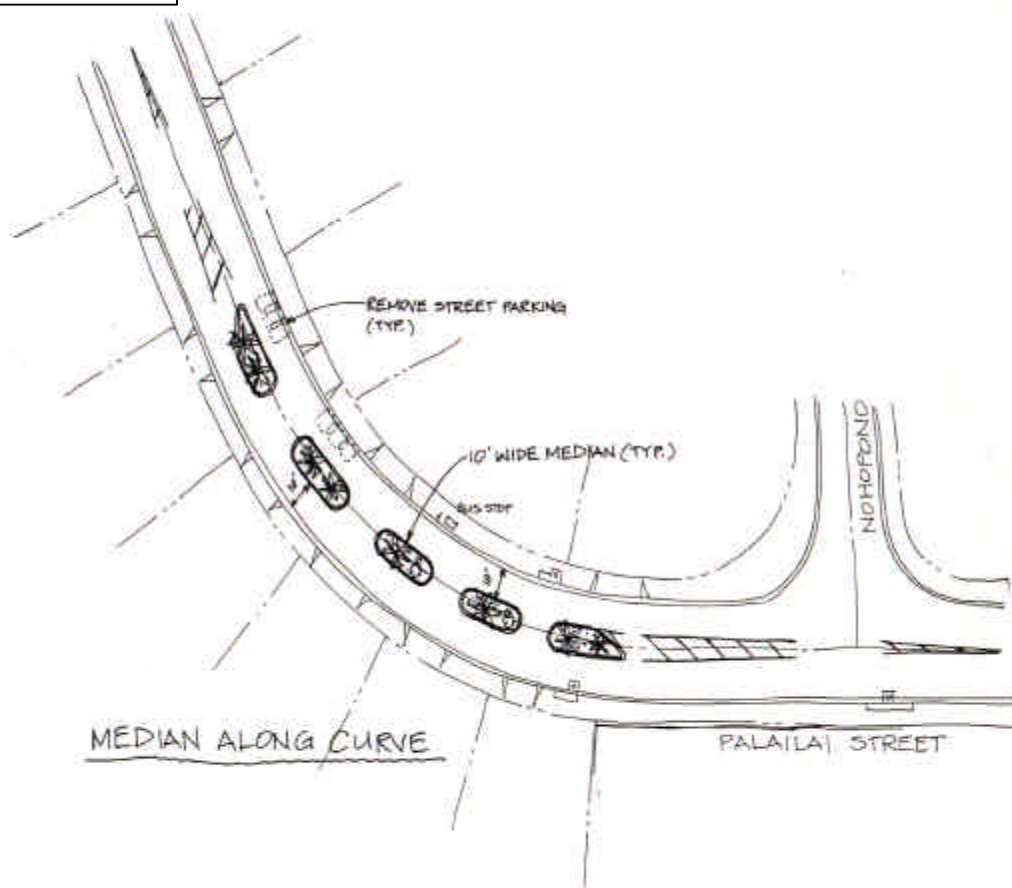


A roundabout was proposed by residents for the intersection of Makakilo Drive and Panana Street. This intersection receives significant pedestrian traffic because of its proximity to the school and the bus stop. The travel lanes are extremely wide on both roadways, making pedestrian crossing difficult.

The design team developed the design above for a single-lane roundabout at this location. The single-lane configuration would provide smooth traffic flow while increasing both pedestrian and driver safety. This roundabout would have a large radius of 32 feet, with a landscaped center island. The travel lane in the roundabout is 20 feet in width from the truck apron to the curb. A splitter island would separate the lanes entering and exiting the roundabout. This device is engineered for a design speed of 20 miles per hour.

Residents agree that this was the best solution for this intersection and asked for it to be included in the priority package of devices.

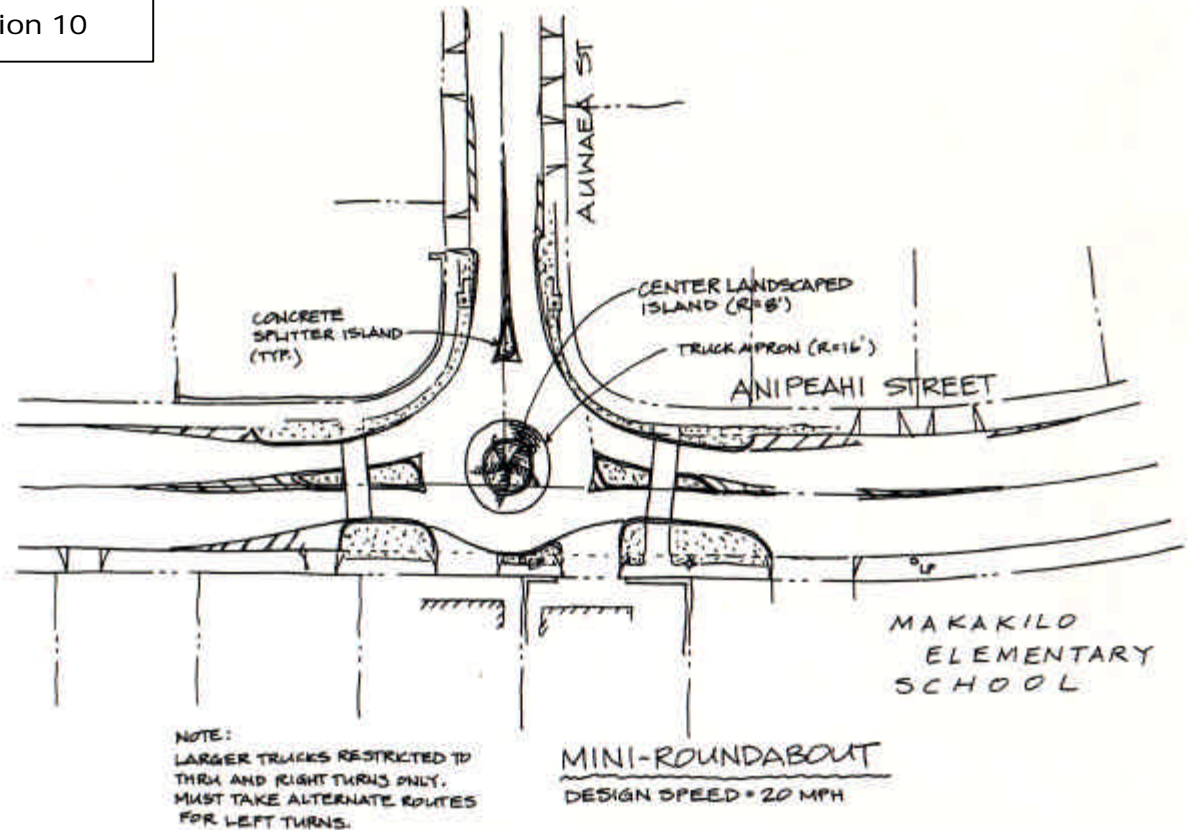
Location 8



At the first charrette, neighborhood residents requested a solution for excessive speeding at a blind curve on Palailai Street mauka of Nohopono Street. The design team recommended the installation of short medians at the curve on Palailai. In the first workshop residents observed that people crossed over the centerline on the curve. The tight radius combined with property-line fencing makes this area a blind corner for some of the neighbors exiting their driveways. The median would help to slow traffic by narrowing the lane both physically and visually, and prevent lane crossover. This solution would require removal of some on street parking at the curve.

This location was not mentioned in the residents' list of top priorities, although nearby residents commented they liked the design.

Location 10

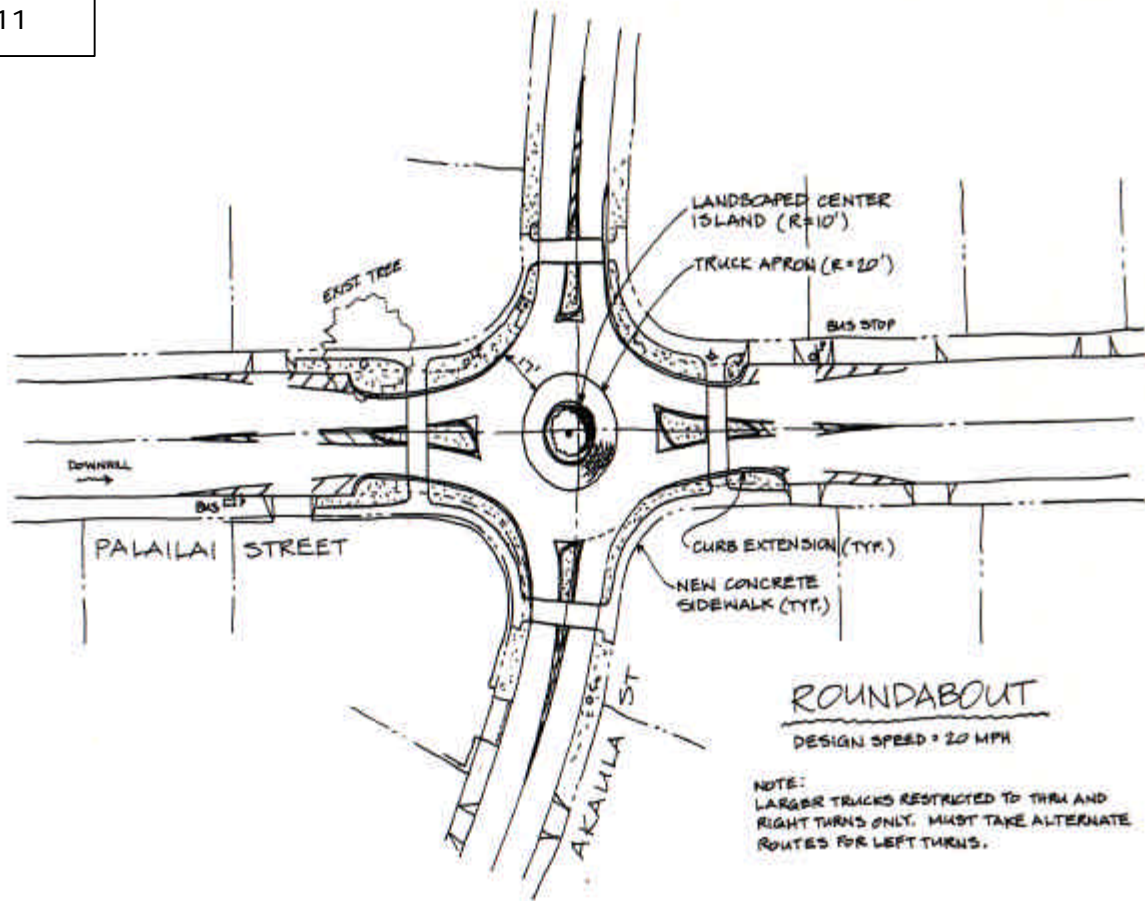


Residents requested a traffic calming solution for the entrance to Makakilo Elementary School. The design team recommended a mini-roundabout at the corner of Auwea Street and Anipeahi Street, in front of Makakilo Elementary School and Makakilo Park.

This mini-roundabout has a center island with an eight-foot radius and a mountable truck apron with a 16-foot radius. The splitter island on the Auwaea leg of the intersection should be a mountable 2 1/2' curb. Large vehicles would not be able to make a left turn, and would have to take alternate routes, which are readily available on the well-connected neighborhood street grid.

Residents ranked this as a very important location for a traffic calming device. The mini-roundabout was designated by neighborhood residents as the third priority for implementation.

Location 11

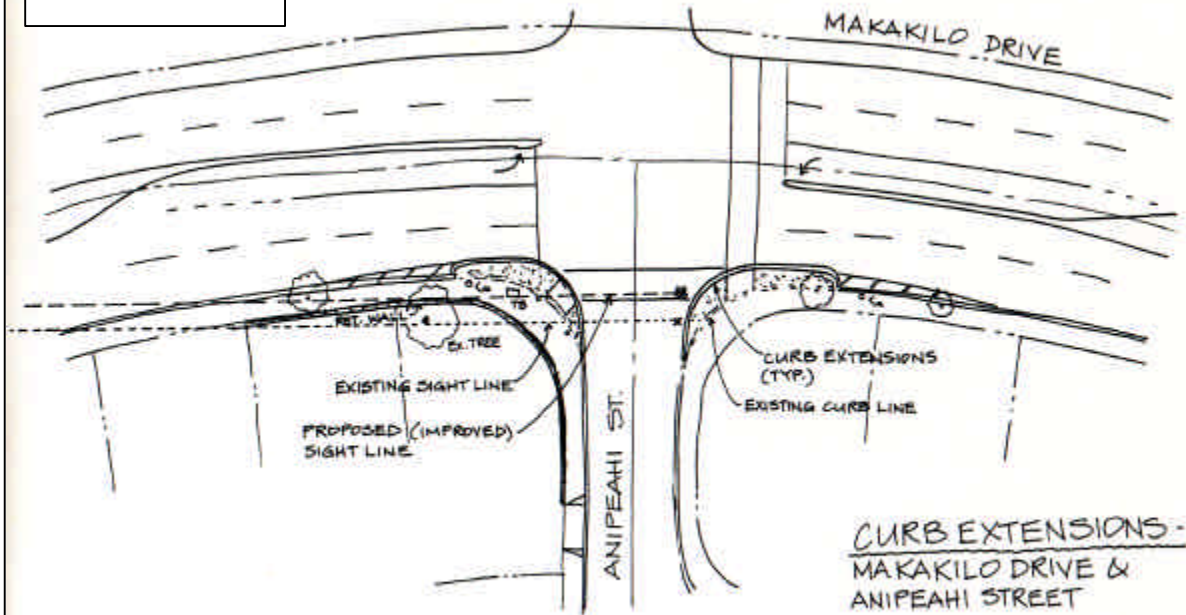


A roundabout is proposed for the intersection of Palailai Street and Akaula Street. Since speeding is reported at this location, residents suggested a roundabout as a good solution during the first workshop. The design team determined that a roundabout would work at this site.

This roundabout would have a center island with a 10-foot radius. The mountable truck apron should have a 20-foot radius. The turning lane in the roundabout would be no more than 17 feet wide to keep the design speed for nearly all vehicles at 20 miles per hour. This intersection is part of TheBus route. At present TheBus travels straight through the intersection. This design accommodates that movement, but would not be sufficient for larger vehicles to make left turns. Other routes through the neighborhood are available for those movements.

Residents felt this was an important intersection to address, but did not feel it should be one of the first areas considered for implementation.

Location 12



The design above was developed for the intersection of Makakilo Drive and Anipeahi Street, where residents were concerned about poor sight lines due to the combination of property-line retaining walls and large curb radii. Residents suggested that a roundabout would be a good solution for this area. Unfortunately, the topography and the large retaining wall make a roundabout in this location impractical.

The traffic calming team developed the much simpler alternative shown above. The added curb extensions would improve sight distances while discouraging excessive speeding around the corner of Makakilo Drive onto Anipeahi Street.

FOLLOW-UP WORKSHOP

The second neighborhood meeting was held on June 1, 2000. The purpose of this workshop was to present the designs the Traffic Calming Team had generated using the residents' input from the April 11 charrette. Several good comments were made and the Team responded as follows:

Q: I thought we could only have one roundabout or improvement; is that right?

A: To achieve maximum traffic calming effect, a long-range plan should lead to implementing most of these devices. Construction budgets in previous neighborhoods have funded two to four devices in the first round, depending on complexity. Tonight, we will help you to identify three to five of your most important improvements and rank them. In a later stage, staff will take a look at the budget and figure out how many can be done during the first round of construction.

Q: Most of these treatments require us to give up parking. Is that right?

A. Actually you don't lose any parking in most of the designs. When we design roundabout or bulbouts at intersections it doesn't affect legal parking because you are not allowed to park close to the intersection anyway. Existing parking will also be retained – and better protected - when the two main streets are narrowed. The solution at the curve on Palailai Street would require loss of parking where the short medians are added. You'll have to talk with your neighbors to decide whether this is acceptable or not.

Q. Can garbage trucks pick-up trash at houses on the top of a Tee intersection if it is turned into a roundabout?

A: The designs presented at this workshop are conceptual, meaning they are designed to show you how the general concept of each of these treatments would work in your neighborhood. After you have approved and prioritized these designs tonight, the next step is to move into more detailed design of the prioritized devices. The consultants working on that design will take all the questions about mailboxes, trash pick-up, and drainage very seriously. It may be the case that your mailbox will be moved so it is more accessible to the mail carrier. Good design will make sure all necessary activities are still possible, even with a beautiful roundabout at the corner.

The team asked neighbors: The landscape maintenance has to be something residents of the neighborhood agree to take care of. What level of treatments would you like?

A. I think Palailai Street and Makakilo Drive should be very high end, as a gateway treatment. The treatments can be less elaborate as you go to make the projects more affordable. I like the idea of a gateway.

Comment: Thank you so much. Everything looks great. My only concern is the turn out at this meeting. While I think everything looks wonderful, we need to have greater agreement from our neighbors. We should work together to get the word out.



Summary

The primary objectives of this process were to: 1) identify issues and concerns, 2) come up with workable solutions, and 3) most importantly, have the residents and board members develop a sense of ownership and commitment to solve the problems that affect their safety, property values and quality of life. This is a citizen's hands-on program, working with government officials. Citizen input is essential to its success.

Makakilo residents at the second workshop agreed on a prioritized list of the first four projects to be completed in their neighborhood. These intersections needed the most attention, and have designs the community wants implemented.

Priorities (from 2nd workshop)

1. ***Median crosswalk in front of Mauka Lani Elementary School.*** (p. 14)
2. ***A package of improvements including:***
 - ***Roundabout at Palahia & Makakilo*** (p. 12)
 - ***Mid-block crossing at trail*** (p. 15)
 - ***Narrowing Makakilo Dr. from Panana St. mauka to top*** (p. 13)
 - ***Roundabout at Panana St. and Makakilo Drive*** (p. 16)
3. ***Mini-roundabout at Makakilo Elementary School*** (p. 17)

Next Steps

The process used has led to consensus building, workable solutions, and an effective partnership between the county and the neighborhood. This should ensure that issues are properly addressed, costs minimized, and results will provide maximum benefit. If ownership of the problems is still weak or lacking, stay on track. The following steps are recommended and vital to success.

(1) Form a Makakilo Transportation Task Team. After the follow-up workshop two members of the neighborhood board and the principal of Mauka Lani School volunteered to get the word out (by circulating the workshop handout) to neighborhood residents that did not attend the workshop. These individuals showed a commitment to the process and are great examples of those who should participate in such a team. The team should meet regularly to help refine the plan and work through implementation strategies with the City's staff.

(2) The neighbors at the meeting took it upon themselves to survey local residents (door to door) to share copies of this report, and to gain added insight and support. Other effective means of continuing to build consensus might be to conduct Open Houses at an area residence or hold a block party or other event.

(3) To see significant and visible changes immediately, residents should begin by being more cautious with their own driving in the neighborhood.

(4) Once a construction budget is allocated, schedule final engineering designs and construction of improvements.

(5) Several of the recommendations included new landscaping features. At the second meeting residents indicated they would like medium to high levels of landscaping. The Transportation Task Team should work with residents to determine who will care for the new treatments, and enter into a Neighborhood Maintenance Agreement with the City.